Publication No. 3E0810
20APR01

Supplement
to the
SERVICE BINDER
for the
Kodak X-Omat 3000 RA INTEGRATED PROCESSOR
Service Code: 3488
with the
5000 BOARD

Important
Qualified service personnel must install this equipment.

HEALTH IMAGING

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This equipment includes parts and assemblies sensitive to damage from electrostatic discharge. Use caution to prevent damage during all service procedures.

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Section 1: Introduction

General Information

The 500 BOARD can no longer be manufactured. Parts are not available. The 5000 BOARD is used as the replacement. The 5000 BOARD is larger than the 500 BOARD, but the MOUNTS and the CONNECTORS are the same as the 500 BOARD. When the 5000 BOARD is a replacement for a 500 BOARD, it is necessary to install updated software and the CLOCK MEMORY MODULE. The updated software does not change the operation of the PROCESSOR, but additional error codes improve diagnostic procedures.

The 5000 BOARD will be installed into production units starting with serial number 150,500 for the 3000 RA INTEGRATED PROCESSOR in a MULTILOADER 300 PLUS.

Important

Installing a 5000 BOARD in a PROCESSOR is not necessary if the 500 BOARD is operating correctly. When the 500 BOARD is no longer available, the 5000 BOARD is sent automatically. The following publications are available to provide service on the 5000 BOARD.

Publication	No.
INSTALLATION INSTRUCTIONS for the 5000 BOARD on the *Kodak X-Omat* 180 LP and LPS PROCESSORS, the *Kodak X-Omat* 270 RA and 480 RA PROCESSORS, and the *Kodak X-Omat* 3000 RA INTEGRATED PROCESSOR	6E5138
INSTALLATION INSTRUCTIONS for the OPERATING SOFTWARE DISK on the *Kodak X-Omat* 180 LP and LPS PROCESSORS, the *Kodak X-Omat* 270 RA and 480 RA PROCESSORS, and the *Kodak X-Omat* 3000 RA INTEGRATED PROCESSOR with the 5000 BOARD	6E5135
INSTALLATION INSTRUCTIONS for the DIAGNOSTICS DISK on the *Kodak X-Omat* 180 LP and LPS PROCESSORS and the *Kodak X-Omat* 3000 RA INTEGRATED PROCESSOR with the 5000 BOARD	7E6487
Supplement to the SERVICE BINDER for the *Kodak X-Omat* 3000 RA INTEGRATED PROCESSOR with the 5000 BOARD	3E0810

This supplement includes:

- DIAGNOSTICS for the error codes
- DIAGRAMS
- ILLUSTRATED PARTS LIST for the 5000 BOARD

There is a separate publication with a different part number for each PROCESSOR.

Section 2: Diagnostics for the 5000 BOARD in the PROCESSOR

Error Codes

Introduction

The software on the 5000 BOARD controls and monitors the operation of the PROCESSOR and continually checks for errors. When an error occurs, the DISPLAY PANEL of the MULTILOADER displays a description of the error.

When 2 or more errors occur together, all the errors are displayed, but the DISPLAY PANEL displays only one error at a time. The error with the highest priority is displayed first.

All errors are stored in an error log on the 5000 BOARD. A LAPTOP COMPUTER with the correct software provides access to the error log. The error log indicates the error and frequency of occurrence of the following errors:

- Fatal
- Nonfatal
- Warning

Fatal and Nonfatal Errors

Only qualified service personnel should repair both fatal and nonfatal errors.

Most fatal errors prevent optimum film processing. Most nonfatal errors do not prevent optimum film processing

Software de-energizes some subsystems to prevent damage. Reset the PROCESSOR by energizing and de-energizing using CB1.

When you service a PROCESSOR with a fatal or nonfatal error and check an electrical component or BOARD, also check:

- connections for the component or BOARD
- voltages from the POWER SUPPLY for the component or BOARD

Warning Errors

Operators can:

- repair warning errors
- override some errors to allow the MULTILOADER to send film

When you check an electrical component or BOARD for any error, also check:

- connections and CABLES
- voltages from the POWER SUPPLY

Check the SOLID STATE RELAYS. See “Troubleshooting the SOLID STATE RELAYS” on Page 14.

Fatal Errors

Code	Description	Possible Cause	Action
E001	MICROCONTROLLER error	5000 BOARD	Install a new 5000 BOARD.
E002	DRYER over maximum temperature **Note** The maximum temperature is 79°C (175°F). Normally, the DRYER DC OVER-TEMPERATURE THERMOSTAT opens before the DRYER reaches this temperature.	DRYER THERMISTOR	Check for approximately 10 kΩ resistance at 25°C (77°F).
		SOLID STATE RELAY U3 (DS5)	Check for correct operation of SSR U3. See "Troubleshooting the SOLID STATE RELAYS" on Page 14.
E004	Inoperative transport	See E041.	
E005	DRYER: • Loss of air flow • OVER-TEMPERATURE THERMOSTAT is open	When this error occurs, the DRYER HEATER and BLOWER are disabled.	
		AIR FLOW SWITCH	Check for correct operation.
		DRYER OVER-TEMPERATURE THERMOSTAT	Reset the THERMOSTAT or install a new THERMOSTAT. If the THERMOSTAT opens again, determine the cause of the over-temperature condition. See E002.
		DRYER BLOWER	Check: • FUSE F1 • correct operation of the BLOWER
		K5002 (DS7)	1. Check for correct operation. 2. If the 5000 BOARD has RELAYS that can be removed, install a new RELAY K5002. 3. If the RELAY cannot be removed, install a new 5000 BOARD.
E007	Failure of the DEVELOPER THERMISTOR	The DEVELOPER HEATER is disabled when this error occurs.	
		DEVELOPER THERMISTOR	Install a new THERMISTOR.
E008	Failure of the FIXER THERMISTOR	The FIXER HEATER is disabled when this error occurs.	
		FIXER THERMISTOR	Install a new THERMISTOR.
E009	Failure of the DRYER THERMISTOR	The DRYER HEATER is disabled when this error occurs.	
		DRYER THERMISTOR	Install a new THERMISTOR.
E010	Failure of the ANALOG-TO-DIGITAL CONVERTER	All 3 HEATERS are disabled when this error occurs.	
		5000 BOARD	Install a new 5000 BOARD.
E013	Failure of the circuit for the LEVEL SENSOR	This error occurs when the circuit for the LEVEL PROBE on the 5000 BOARD malfunctions. The following parts are disabled: • DEVELOPER and FIXER REPLENISHMENT PUMPS • RECIRCULATION PUMP	
		5000 BOARD	Install a new 5000 BOARD.

Nonfatal Errors

Code	Description	Possible Cause	Action
E032	DEVELOPER TANK fill error	This error occurs if the: • DEVELOPER TANK – does not fill in 4 minutes in normal operation – does not fill in 15 minutes in the Tank Fill Mode – is empty and the operator does not select the Tank Fill Mode • REPLENISHMENT TANK is empty • REPLENISHMENT HOSE has an obstruction • TANKS of the PROCESSOR are filled with water during the first installation The following are disabled: • DEVELOPER REPLENISHMENT PUMP • RECIRCULATION PUMP • Temperature control for the fixer and the developer To prevent the error from occurring during the first installation: • Add 240 mL (8 fl oz) of developer to the DEVELOPER TANK before you fill the PROCESSOR with water. • Energize the RECIRCULATION PUMP to move the developer and remove air bubbles. Use the diagnostics for the LAPTOP COMPUTER to energize the PUMP.	
		LEVEL PROBES	Clean and check the PROBES.
		The solution level in the REPLENISHER TANK is low.	Mix a developer solution.
		Solution does not flow through the HOSES between the REPLENISHMENT TANK and the REPLENISHMENT PUMP.	Check: • HOSE CLAMPS are tight • HOSES – are round and open – have no obstructions or air bubbles
		DEVELOPER DRAIN VALVE	Check that the VALVE is closed.
		DEVELOPER REPLENISHMENT PUMP	1. Check: • FUSE F1 • correct operation of the REPLENISHMENT PUMP MOTOR B3 • correct operation of the POPPET VALVES inside the REPLENISHMENT PUMP 2. Clean or do a replacement as necessary.
		SOLID STATE RELAY U2 (DS3)	Check for correct operation of SSR U2. See “Troubleshooting the SOLID STATE RELAYS” on Page 14.
		K5006 (DS11)	1. Check for correct operation. 2. If the 5000 BOARD has RELAYS that can be removed, install a new RELAY K5006. 3. If the RELAY cannot be removed, install a new 5000 BOARD.

Code	Description	Possible Cause	Action
E033	FIXER TANK fill error	This error occurs if: • FIXER TANK: – does not fill in 4 minutes in normal operation – does not fill in 15 minutes in the Tank Fill Mode – is empty and the operator does not select the Tank Fill Mode • REPLENISHMENT TANK is empty • REPLENISHMENT HOSE has an obstruction • TANKS of the PROCESSOR are filled with water during the first installation The following are disabled: • FIXER REPLENISHMENT PUMP • RECIRCULATION PUMP • Temperature control for the fixer and developer To prevent the error from occurring during the initial installation: • Add 240 mL (8 fl oz) of fixer to the FIXER TANK before you fill the PROCESSOR with water. • Energize the RECIRCULATION PUMP to move the fixer and remove any air bubbles. Use the diagnostics to energize the PUMP.	
		LEVEL PROBES	Clean and check the PROBES.
		The solution level in the REPLENISHER TANK is low.	Mix new fixer solution.
		Solution does not flow through the HOSES between the REPLENISHMENT TANK and the REPLENISHMENT PUMP.	Check: • HOSE CLAMPS are tight • HOSES: – are round and opened – have no obstructions or air bubbles
		FIXER DRAIN VALVE	Check that the VALVE is closed.
		FIXER REPLENISHMENT PUMP	1. Check: • FUSE F1 • correct operation of the REPLENISHMENT PUMP MOTOR B4 • correct operation of the POPPET VALVES inside the REPLENISHMENT PUMP 2. Clean or do a replacement as necessary.
		SOLID STATE RELAY U4 (DS2)	Check for correct operation of SSR U4. See “Troubleshooting the SOLID STATE RELAYS” on Page 14.
		K5006 (DS11)	1. Check for correct operation. 2. If the 5000 BOARD has RELAYS that can be removed, install a new RELAY K5006. 3. If the RELAY cannot be removed, install a new 5000 BOARD.

Code	Description	Possible Cause	Action
E037	Loss of DEVELOPER heating ability	When the DEVELOPER HEATER is extremely hot, the OVER-TEMPERATURE THERMOSTAT opens. Wait for the DEVELOPER HEATER to cool and the OVER-TEMPERATURE THERMOSTAT to reset before measuring the resistance.	
		DEVELOPER HEATER HR1	Check: • FUSE F2 • for approximately 70.5 Ω resistance at 25°C (77°F)
		SOLID STATE RELAY U1 (DS4)	Check for correct operation of SSR U1. See "Troubleshooting the SOLID STATE RELAYS" on Page 14.
		RELAY K5004 (DS9)	1. Check for correct operation. 2. If the 5000 BOARD has RELAYS that can be removed, install a new RELAY K5004. 3. If the RELAY cannot be removed, install a new 5000 BOARD.
		RECIRCULATION PUMP	Check: • FUSE F1 • voltage to RECIRCULATION PUMP MOTOR B5 • correct operation of the RECIRCULATION PUMP
		DEVELOPER COOLING SOLENOID L2	Check that the SOLENOID is shutting off the developer flow through the HEAT EXCHANGER.

Code	Description	Possible Cause	Action
E038	Loss of developer cooling ability	Water does not enter the WASH TANK.	Check: • water supply to the PROCESSOR – water supply is turned on – FILTER is clean • WASH WATER SOLENOID L1 – operation is correct – SCREEN has no obstructions • DEVELOPER COOLING SOLENOID L2 • QUICK DISCONNECT
		The temperature of the water entering the WASH TANK is too hot.	Decrease the temperature of the water supply. The wash water must be a minimum of 5.5°C (42°F) below the set point of the developer.
		HEAT EXCHANGER in the WASH TANK	Remove any obstructions from the EXCHANGER.
		The 5000 BOARD does not energize SOLENOIDS: • WASH WATER SOLENOID L1 • DEVELOPER COOLING SOLENOID L2	1. Check that the correct LED on the 5000 BOARD is energized: • DS15 for L1 • DS14 for L2 2. Check for 24 V DC at TERMINALS 1 and 2 on: • WASH WATER SOLENOID L1 • DEVELOPER COOLING SOLENOID L2 3. If necessary, install a 5000 BOARD.
		There is AC power at the RECIRCULATION PUMP, but the PUMP does not operate.	Check the RECIRCULATION PUMP MOTOR B5. If necessary, install a PUMP.
		There is no AC power to the RECIRCULATION PUMP	1. Check for correct operation of RELAY K5003. 2. If the 5000 BOARD has RELAYS that can be removed, install a new RELAY K5003. 3. If the RELAY cannot be removed, install a new 5000 BOARD.
		The WASH TANK CLIP is not fully seated or is not installed.	Check that the CLIP is fully seated. If necessary, install the CLIP again.

Code	Description	Possible Cause	Action
E039	Loss of fixer heating ability	When the FIXER HEATER HR2 is extremely hot, the OVER-TEMPERATURE THERMOSTAT opens. Wait for the FIXER HEATER to cool and the OVER-TEMPERATURE THERMOSTAT to reset before measuring the resistance.	
		FIXER HEATER HR2 is open or has a short circuit, or the resistance is not correct.	Check: • FUSE F2 • for approximately 70.5 Ω resistance at 25°C (77°F)
		SOLID STATE RELAY U5 (DS1)	Check for correct operation of SSR U5. See “Troubleshooting the SOLID STATE RELAYS” on Page 14.
		RELAY K5004 (DS9)	1. Check for correct operation. 2. If the 5000 BOARD has RELAYS that can be removed, install a new RELAY K5004. 3. If the RELAY cannot be removed, install a new 5000 BOARD.
		RECIRCULATION PUMP	Check: • FUSE F1 • correct operation of MOTOR B5

Code	Description	Possible Cause	Action
E040	Loss of DRYER heating ability	A PANEL or DRYER RACK is not installed.	Install the part.
		SOLID STATE RELAY U3 (DS5) that controls the DRYER HEATER	Check for correct operation of SSR U3. See "Troubleshooting the SOLID STATE RELAYS" on Page 14.
		RELAY K1	Check for correct operation.
		DRYER HEATER HR3	Check for approximately 16 Ω resistance at 25°C (77°F).
		RELAY K5001 (DS6) **Note** This RELAY controls the COIL of RELAY K1.	1. Check for correct operation. 2. If the 5000 BOARD has RELAYS that can be removed, install a new RELAY K5001. 3. If the RELAY cannot be removed, install a new 5000 BOARD.
		No continuity for the DRYER HEATER THERMAL CUTOFF	1. Check that the DRYER BLOWER operates correctly. 2. Install a new CUTOFF.
		DRYER OVER-TEMPERATURE THERMOSTAT	1. Reset the THERMOSTAT. 2. If the THERMOSTAT opens again, determine the cause of the high temperature. 3. If you cannot determine the cause of the problem, install a THERMOSTAT.

Code	Description	Possible Cause	Action
E041	There is no transport speed control. **Note** This error occurs when the transport speed is adjusted for 10 seconds and the speed is not within 7.6 cm/min (3 in./min) of the set point.	When the PROCESSOR operates normally, the supply voltage from the QUAD POWER SUPPLY to the + and - TERMINALS of the DRIVE MOTOR CONTROLLER is 24 V DC. Feedback pulses from the DRIVE MOTOR CONTROLLER at test point MOTFB on the 5000 BOARD indicate the speed of the DRIVE MOTOR. If the transport speed operates slower than the set speed, the MICROPROCESSOR increases the control voltage approximately 25 mV every second at test point MOTDRV on the 5000 BOARD. When the voltage reaches 5 V DC, the MICROPROCESSOR stops increasing the voltage. **Note** There is a variation of voltages from one PROCESSOR to another. The control voltage at test point MOTDRV on the 5000 BOARD is approximately: • 1.0 V DC for the extended speed • 1.9 V DC for the standard speed • 2.6 V DC for the rapid speed • 3.4 V DC for the K/RA speed	
		5000 BOARD	If the control voltage is not correct at test point MOTDRV on the 5000 BOARD, install a new 5000 BOARD.
		7000 BOARD	Install the PROCESSOR in the MULTILOADER and check for the following voltages on the 7000 BOARD: • 24 V DC between PINS 1 and 10 of PJ7003 • 5 V DC between PINS 4 and 10 of PJ7003
		DC DRIVE MOTOR B6 or DRIVE MOTOR CONTROLLER	1. Check that MOTOR B6 has a pulse during operation. 2. If no pulses occur at test point MOTFB on the 5000 BOARD, install a new 5000 BOARD.
E042	Loss of accessory data link	Loose connections	Check all connections between the MULTILOADER and the PROCESSOR.
E043	STATIC RAM BATTERY failure	Battery powered RAM is corrupted. The cycle default values are loaded into the cycle process parameters. Any changes are not saved during power down.	Install a new CLOCK/MEMORY MODULE U21. **Note** You need to enter any custom process parameters, set points.

Warnings

Code	Description	Possible Cause	Action
E128	The TOP COVER is not installed correctly.	When this error occurs, the following are disabled: • film transport • DRYER HEATER • BLOWER	
		The TOP COVER is open.	Close the TOP COVER.
		INTERLOCK SWITCH S4	Check SWITCH S4. If necessary, install SWITCH S4.
		7000 BOARD	Install a 7000 BOARD.
E129	The TANKS are filling.	When this error occurs, the following are disabled: • film transport • RECIRCULATION PUMP • 3 HEATERS • DRYER BLOWER	
		None	None. This message clears automatically.
E130	The REPLENISH PUMPS are disabled.	None	Use the KEYPAD to select either “Automatic” or “Flooded Replenishment” to enable the PUMPS.
E132	DEVELOPER under set temperature		This message clears automatically when the developer reaches the set point temperature.
E133	DEVELOPER over set temperature		
E134	DRYER under set temperature		
E141	Low DEVELOPER TANK level	When this error occurs, the following are disabled: • RECIRCULATION PUMP • temperature control for the fixer and the developer	
		None	This error clears automatically when the developer solution reaches the correct level.
E142	Low FIXER TANK level	When this error occurs, the following are disabled: • RECIRCULATION PUMP • temperature control for the fixer and developer	
		None	This error clears automatically when the fixer solution reaches the correct level.

Troubleshooting the SOLID STATE RELAYS

SOLID STATE RELAYS - Theory

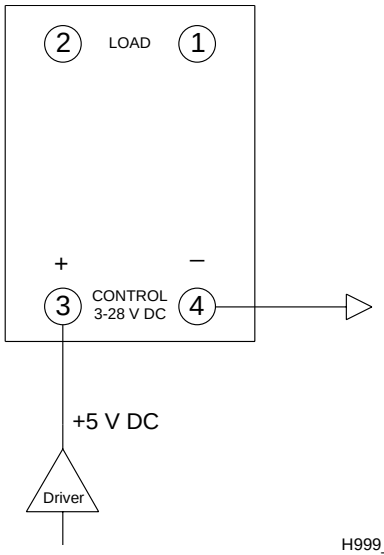
SOLID STATE RELAYS (SSRs) are used in the PROCESSORS primarily to control the loads from HEATERS that switch on and off several times per minute. The main advantage of using SSRs is the increased reliability compared to conventional electromechanical RELAYS. SSRs have the additional advantage of a reduced current requirement for the control voltage.

SSRs are applied in 2 different classes of PROCESSORS:

- The first application is in older PROCESSORS, such as the *Kodak* RP *X-Omat* PROCESSOR, MODELS M6B/M7B, the *Kodak X-Omat* 2000 PROCESSOR, and the *Kodak Min-R* MAMMOGRAPHY PROCESSOR. This application applies a 12 V DC signal to the control side of the RELAY in order to energize the AC HEATER load.
- The other application is in the *Kodak X-Omat* 180 LP PROCESSOR and the *Kodak X-Omat* 270/3000/5000 RA PROCESSORS that use a +5 V DC control signal. Both applications use the RELAY to control large HEATER loads with low voltage DC signals.

The difference between the 2 applications is the value of the control signal and how it is applied to the RELAY.

RA PROCESSORS



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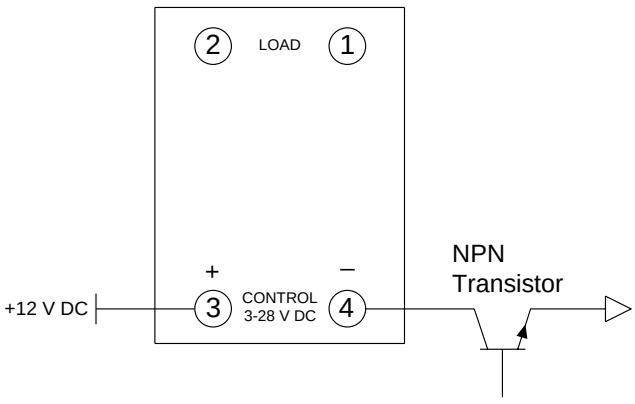
In the RA PROCESSORS, the negative TERMINAL is permanently connected to ground. The RELAY is switched on when +5 V DC is applied to the positive TERMINAL. This +5 V DC comes from an INTEGRATED CIRCUIT DRIVER located on either the 500 BOARD or the 5000 BOARD. If a DC meter is placed across the control TERMINALS, the RELAY is considered ON if +5 V DC, ranges from 3 - 5 V DC, is measured from the positive to the negative TERMINALS. These measurements must be made across the TERMINALS.

Other PROCESSORS



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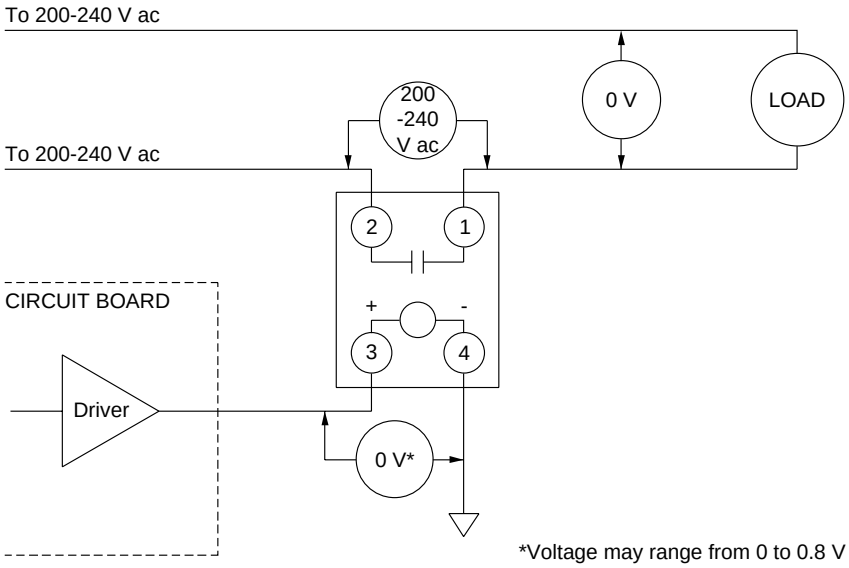
In other PROCESSORS, 12 V DC is applied to the positive, or plus, TERMINAL of the SSR and the RELAY is turned on by switching the negative, or minus, TERMINAL to ground. If a DC meter is placed across the control TERMINALS, the RELAY is considered ON if +12 V DC, ranges from 9 - 12 V DC, is measured from the positive to the negative TERMINALS. These measurements must be made across the TERMINALS.

Normal Voltages for the OFF Mode

Important

Normal circuits, normally checked with a VOLTMETER, are in the ON and OFF modes and with normal voltage applied. The voltage measurements are approximate.



*Voltage may range from 0 to 0.8 V dc.

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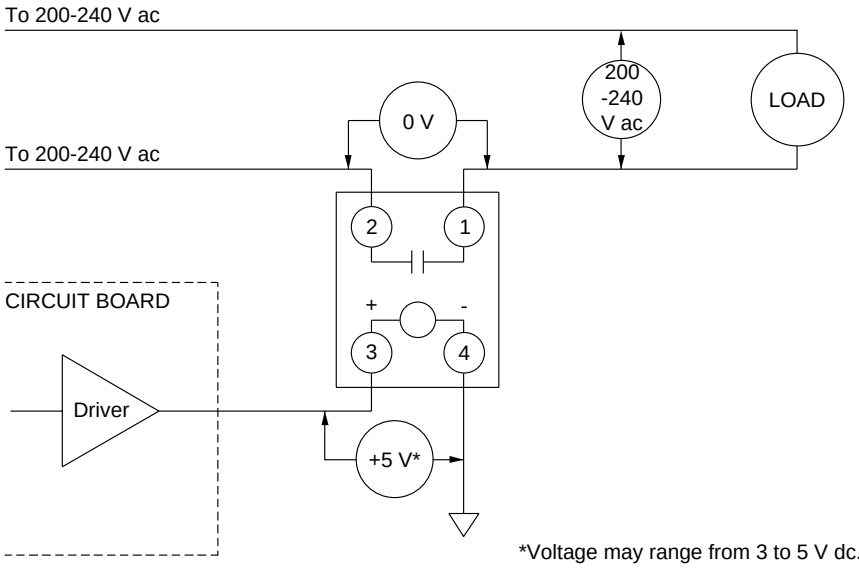
Normal Voltages for the ON Mode



*Voltage may range from 3 to 5 V dc.

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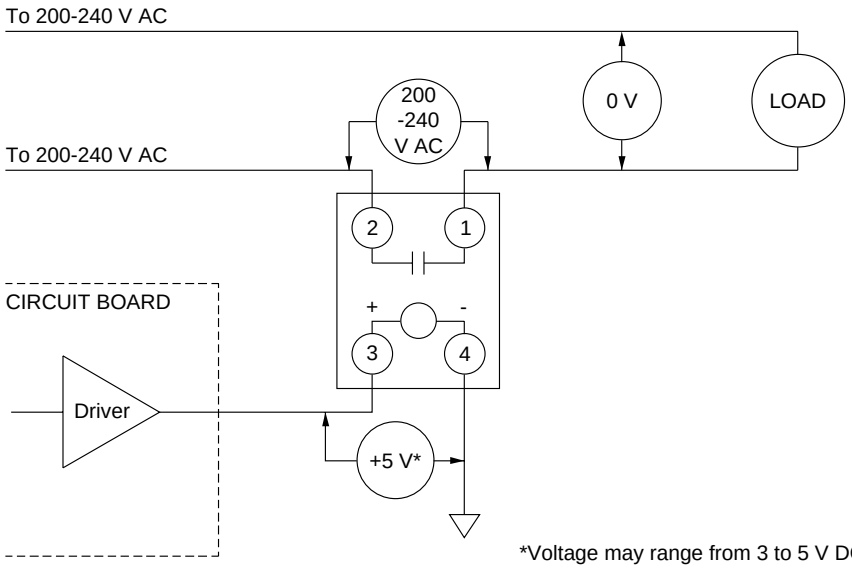
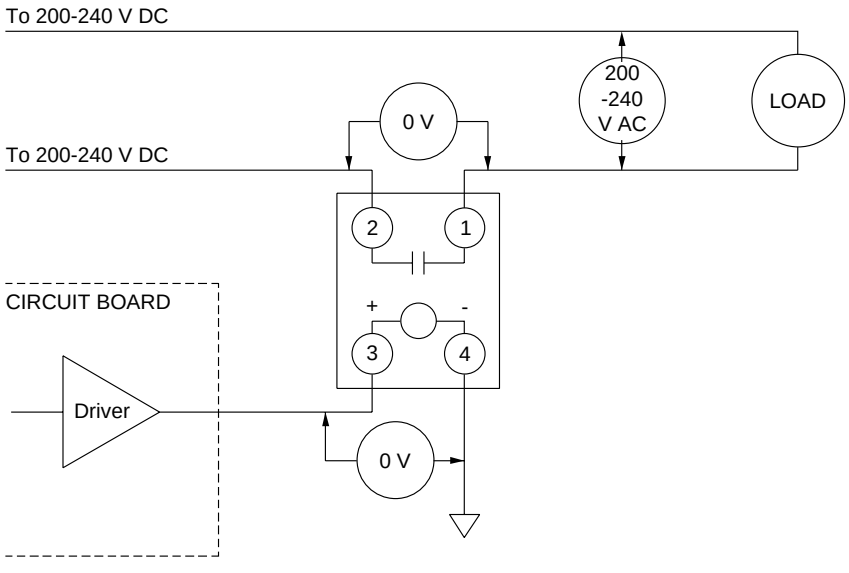
Open Circuit Voltages



RELAY voltage controls such as SSRs are complex. There are 4 primary conditions which might indicate malfunctions connected with an SSR.

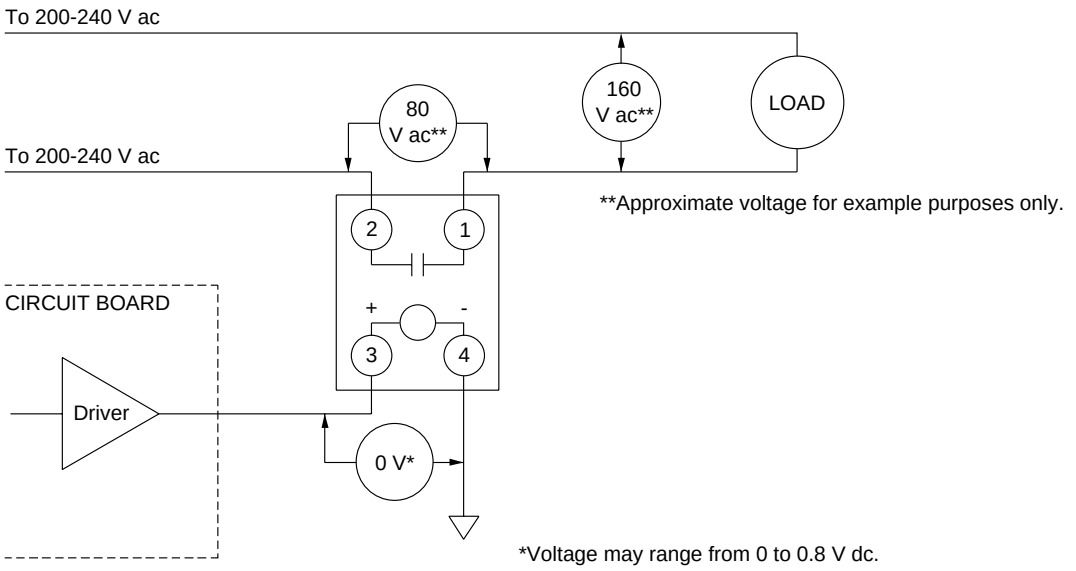
The SSR has an open circuit. The load is never ON. The control voltage occurs, 5 V DC across PINS 3 and 4, but the RELAY does not energize.

Short Circuit Voltages



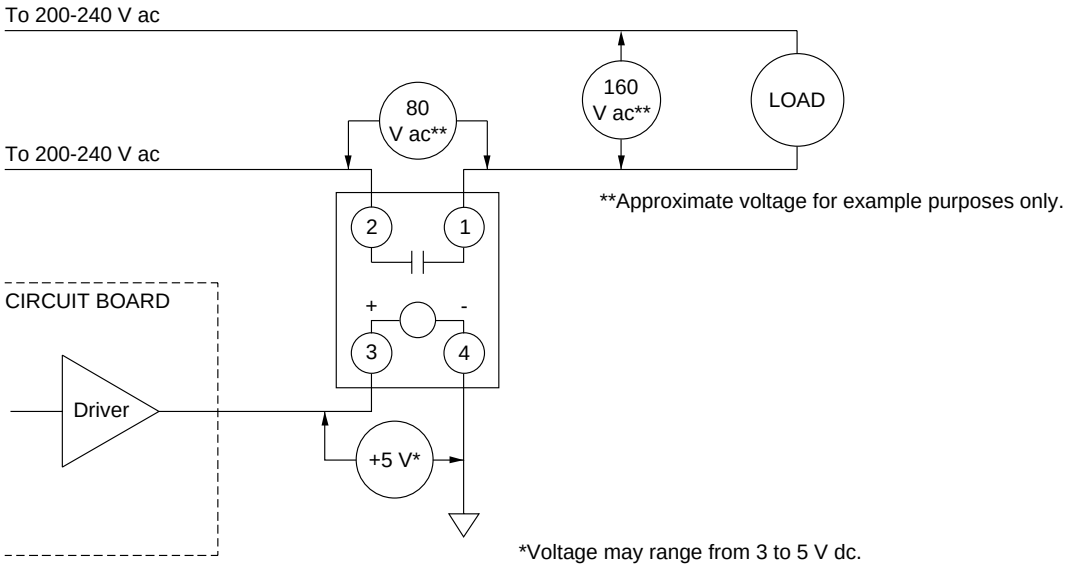
The SSR has a short circuit. The load is always ON. The control voltage does not occur, 0 V across PINS 3 and 4, but the load is energized.

Half-Wave Short Circuit Voltages with Control Voltage OFF



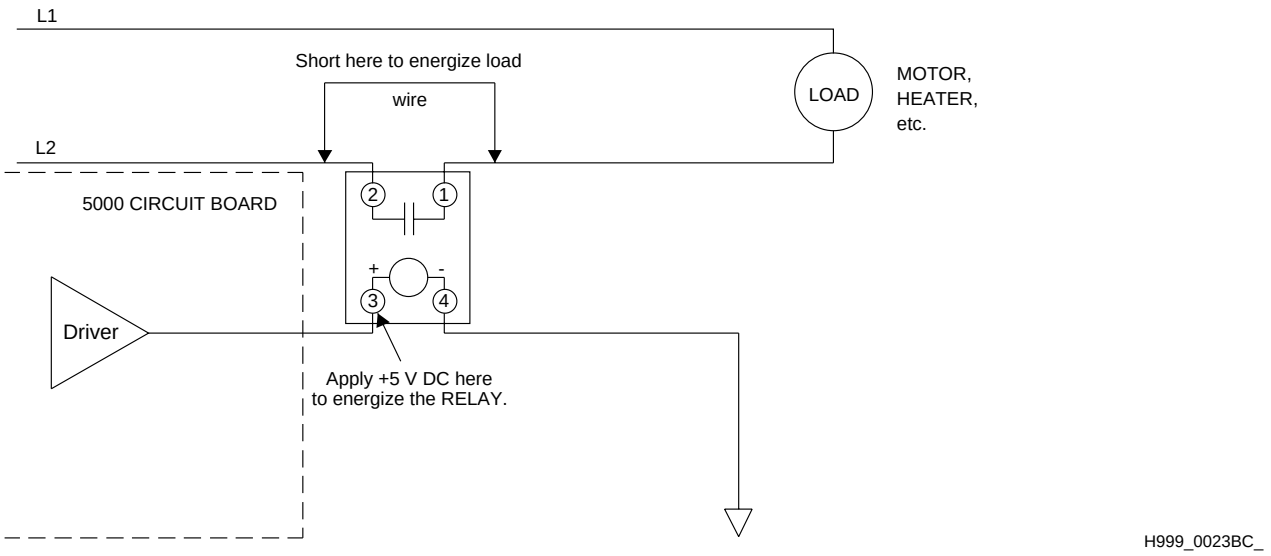
In a half-wave short circuit, the load is always partially ON. When no control voltage is present, 0 V across PINS 3 and 4, the load has low voltage power. This is because half of the SSR has a short circuit and passes half-wave rectified alternating current to the load. A meter indicates a voltage between 240 V AC and 0 V across the load. When logic turns the SSR on, the load operates normally.

Half-Wave Open Circuit Voltages with Control Voltage ON



In a half-wave open circuit, half of the SSR is never ON, and half is ON when controlled. The SSR is activated by the signal from the BOARD, 5 V DC across PINS 3 and 4, but the load has only low voltage power supplied. This is caused by an open circuit of half of the SSR, and can only provide half-wave rectified alternating current to the load. The VOLTMETER indicates a voltage between 240 V AC and 0 V across the load when the SSR is energized. In this condition, half of the SSR is always OFF.

Wire Test



Before doing a replacement of parts, do these tests to locate the problem. The 3 possibilities are:

1. Control voltage is supplied. The SSR is reacting, but the load does not operate.

   Result: A failure has occurred on the load, MOTOR, HEATER, etc.

2. Control voltage is supplied, but the SSR is not conducting.

   Result: A failure has occurred on the SOLID STATE RELAY.

3. The 5000 BOARD does not supply the control voltage at the correct time.

   Result: A failure has occurred on the 5000 BOARD.

Mechanical Errors

Transport Malfunctions

Solutions for the RACKS and CROSSOVERS

[1] Check:

- RACKS and CROSSOVERS are seated and installed correctly
- for squareness of the RACKS and CROSSOVERS
- RACKS and CROSSOVERS are completely cleaned
- CROSSOVER TROUGHS are in the correct positions
- WATER YOKE is installed correctly

Solutions for the ROLLERS

[1] Check:

- ROLLERS are correctly positioned and are rotating freely
- ROLLER GEARS, SPROCKETS, and IDLERS are engaged

[2] Install ROLLERS if broken or GUDGEONS have wear.

[3] If any BEARINGS have wear, remove and install BEARINGS.

[4] If any SPRINGS or E-RINGS are broken, install SPRINGS or E-RINGS.

[5] Adjust the tension on the RACK CHAIN so that the ROLLERS operate smoothly.

Solutions for the DRYER

[1] Check:

- DRYER AIR TUBES are in the correct positions
- DRYER TEMPERATURE CONTROL KNOB is set to the lowest possible temperature that allows the film to dry
- DRYER RACK and EXIT RACK are seated correctly and the LOCKING TABS are in the correct positions
- for damage to the DRYER DRIVE GEAR

Miscellaneous Solutions

[1] Check that the TOP COVER is closed.

Surface Artifacts or Densities that are not Normal

Replenishment Solutions

[1] Check:

- replenishment rates are set for correct replenishment
- replenishment calibration is correct
- TUBING of the REPLENISHMENT SYSTEM is not bent or pinched
- REPLENISHMENT PUMP is operating
- HOSE CLAMPS are tight
- LEVEL SENSOR PROBES and CONNECTORS are cleaned

[2] Change any chemicals that were not mixed correctly, are exhausted, or are contaminated.

[3] When mixing chemicals, the following are recommend:

- mix a maximum of a 2 week supply of DEVELOPER REPLENISHER
- mix all chemicals and solutions as directed
- prevent contaminating the developer using a SPLASH GUARD and DRIP TRAY when removing the FIXER RACK from the PROCESSOR

[4] Fill the REPLENISHER TANKS if the solution levels are low.

[5] Check:

- DRAIN VALVES are completely closed
- TANKS are full

Recirculation Solutions

[1] Check that the ORIFICES in the DEVELOPER and the FIXER RECIRCULATION HOSE are not blocked.

[2] Install a DEVELOPER FILTER.

[3] With the PROCESSOR energized and the processing TANKS full, check for movement of the solutions at the surface of the TANKS. Movement indicates recirculation. If no movement is observed, check:

- TUBING for the RECIRCULATION SYSTEM is not bent or pinched
- PUMP is operating
- DEVELOPER FILTER is correctly positioned

Solutions for the RACKS and CROSSOVERS

[1] Check:

- RACKS and CROSSOVERS are in the correct position
- RACKS and CROSSOVERS are clean
- CROSSOVER TROUGHS and the EVAPORATION COVERS are in the correct positions
- WATER YOKE is installed correctly
- RACKS are correctly seated

Solutions for the ROLLERS

[1] Check that the surfaces of all the ROLLERS are clean and smooth, especially in the DEVELOPER RACK and CROSSOVERS.

[2] Remove debris from the DETECTOR ROLLERS.

[3] Check:

- CROSSOVER GUIDE SHOES are clean
- ROLLERS are correctly positioned and are rotating freely
- ROLLER GEARS, SPROCKETS, and IDLERS are engaged

[4] Install:

- ROLLERS if broken or the GUDGEONS have wear
- BEARINGS if the BEARINGS have wear
- broken SPRINGS or E-RINGS

[5] Adjust the tension on the RACK CHAIN so that the ROLLERS operate smoothly.

Solutions for the DRYER

[1] Remove debris from the DRYER AIR TUBES and the SLOTS in the DRYER AIR TUBES.

[2] Using the BOTTLE BRUSH TL-4833, clean the AIR TUBES.

[3] Rinse the AIR TUBES with water.

[4] Check that the AIR TUBES are in the correct position.

[5] Adjust the CONTROL KNOB for the DRYER TEMPERATURE to the lowest temperature that allows the film to dry.

Miscellaneous Solutions

[1] Check:

- incoming water temperature is between 4 - 29°C (40 - 85°F)
- TOP COVER is closed and the ACCESS PANELS are installed on the PROCESSOR
- no leakage of light through the LIGHT-TIGHT GASKET on the PRINTER DOCKING ASSEMBLY
- wash water is flowing
- WET SECTION COVER is in the correct position
- ventilation is correctly set and the EXHAUST HOSE is connected

Wet Films

Replenishment Solutions

[1] Check:

- replenishment rates are set for correct replenishment
- replenishment calibration is correct
- TUBING of the REPLENISHMENT SYSTEM is not bent or pinched
- REPLENISHMENT PUMP is operating
- HOSE CLAMPS are tight
- LEVEL SENSOR PROBES and CONNECTORS are clean

[2] Change any chemicals that were not mixed correctly, are exhausted, or are contaminated.

[3] When mixing chemicals, the following are recommend:

- mix a maximum of a 2 week supply of DEVELOPER REPLENISHER
- mix all chemicals and solutions as directed
- prevent contaminating the developer by using a SPLASH GUARD and DRIP TRAY when removing the FIXER RACK from the PROCESSOR

[4] Fill the REPLENISHER TANKS if the solution levels are low.

[5] Check:

- DRAIN VALVES are completely closed
- TANKS are full

Recirculation Solutions

[1] With the PROCESSOR energized and the TANKS full, check for movement of the solutions at the surface of the processing TANKS. Movement indicates flow. If no movement is observed, check:

- TUBING of the recirculation system does not have obstructions or binds
- RECIRCULATION PUMP is operating
- DEVELOPER FILTER is seated correctly

Solutions for the DRYER

[1] Check that the DRYER AIR TUBES are in the correct positions.

[2] Remove debris from the DRYER AIR TUBES and the SLOTS in the DRYER AIR TUBES.

[3] Using the BOTTLE BRUSH TL-4833, clean the AIR TUBES.

[4] Rinse the AIR TUBES with water.

[5] Adjust the CONTROL KNOB for the DRYER TEMPERATURE to the lowest temperature that allows the film to dry.

[6] Check:

- DRYER AIR EXHAUST is free from obstruction and is installed to specification
- DRYER HEATER is operating
- DRYER and EXIT ASSEMBLIES are correctly seated

Wash Water Solutions

[1] Check:

- for flow of wash water on the ROLLERS on the WASH RACK
- CROSSOVER TROUGHS are draining correctly

[2] If necessary, clean the drain holes in the CROSSOVER TROUGHS to prevent overflow of the wash water and dilution of the developer and the fixer.

Solution Levels

Replenishment Solutions

[1] Check:

- replenishment rates are set for correct replenishment
- replenishment calibration is correct
- TUBING of the REPLENISHMENT SYSTEM is not bent or pinched
- REPLENISHMENT PUMP is operating

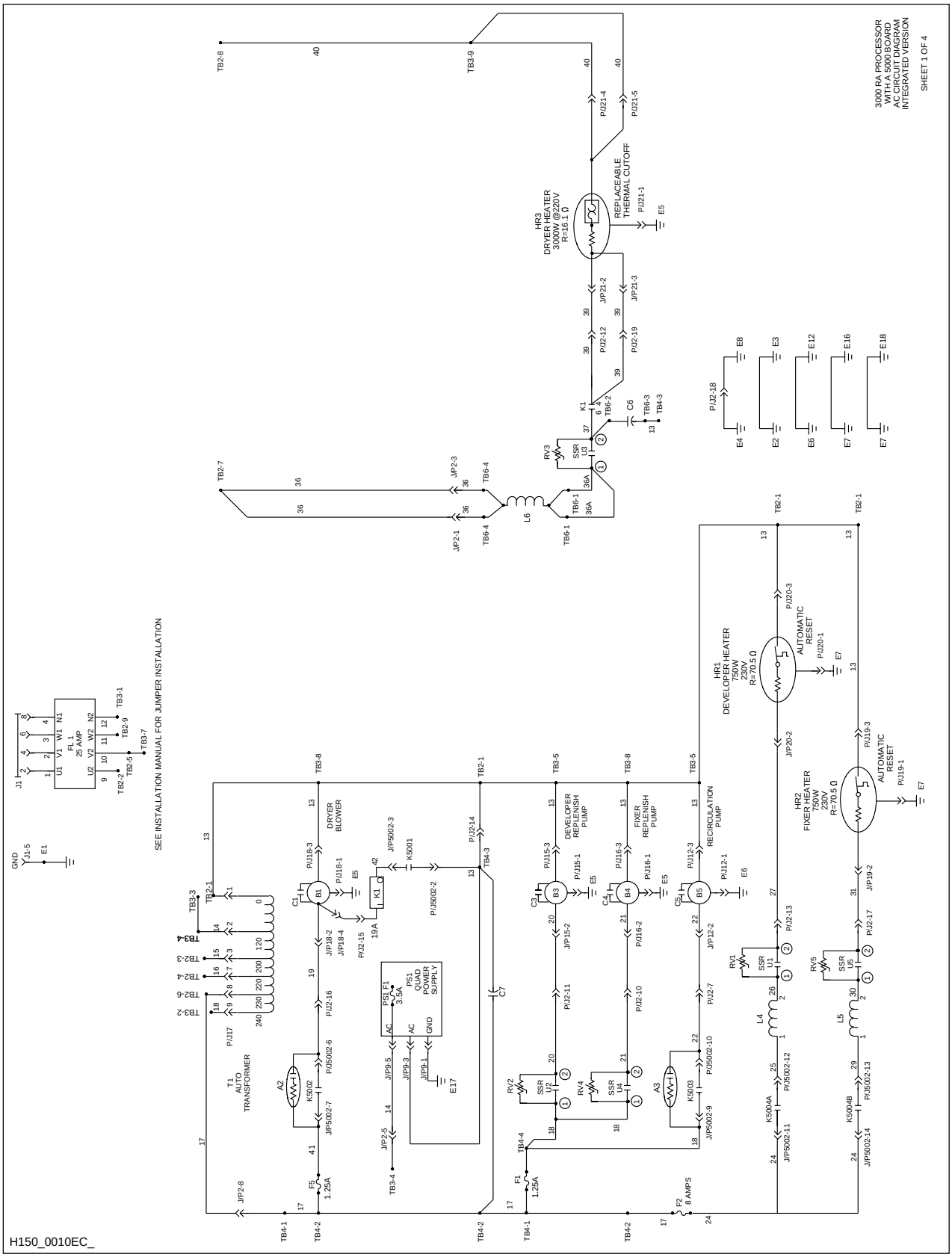
[2] Fill the REPLENISHER TANKS if solution levels are low.

[3] Check:

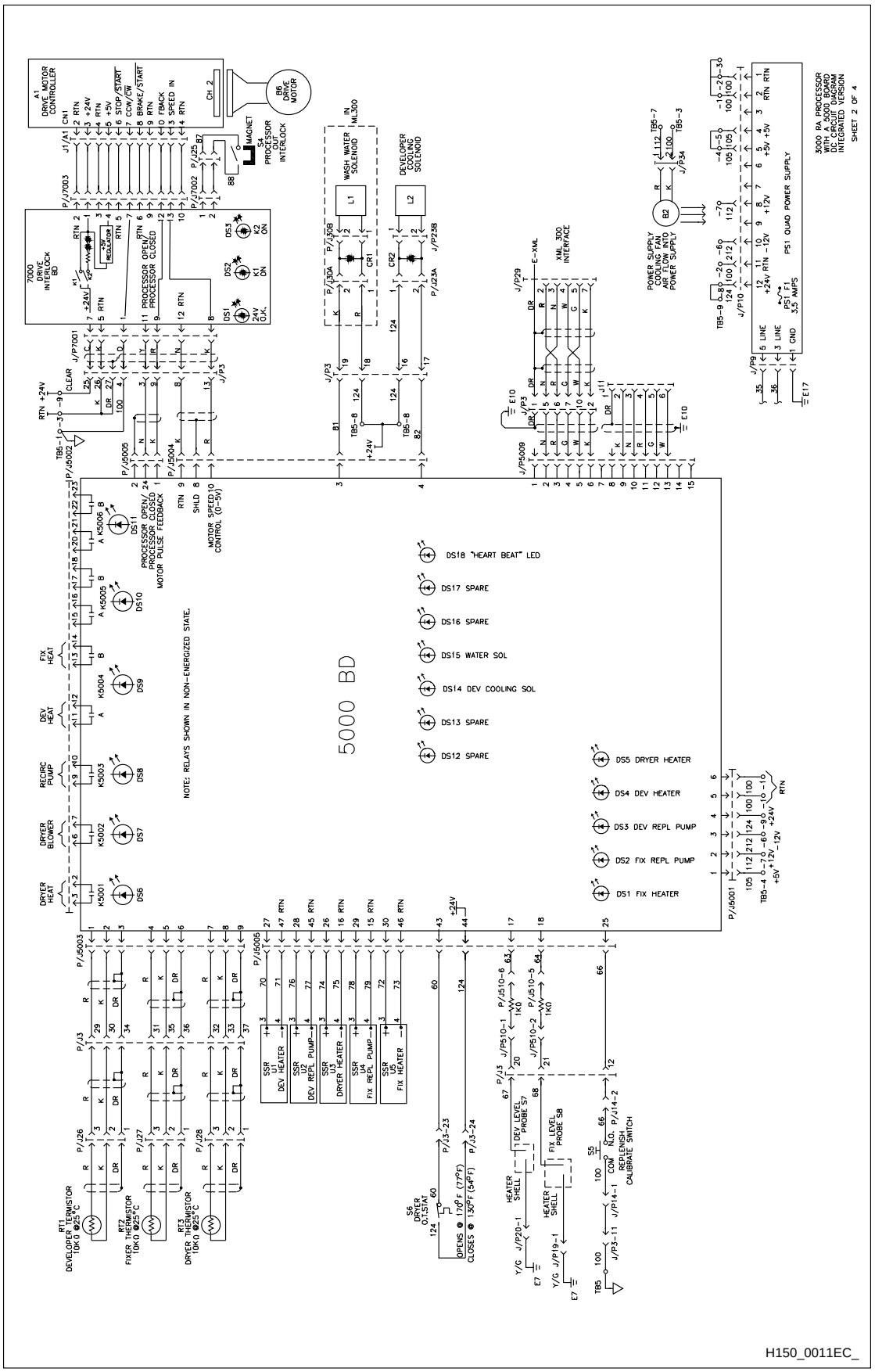
- POPPET SEATS are not dirty and have no distortion that prevents correct replenishment
- LEVEL PROBES and the SPRING SPADES are clean and free from debris
- TUBING and HOSES are not bent and have no air bubbles
- DRAIN VALVES for leakage

Section 3: Diagrams

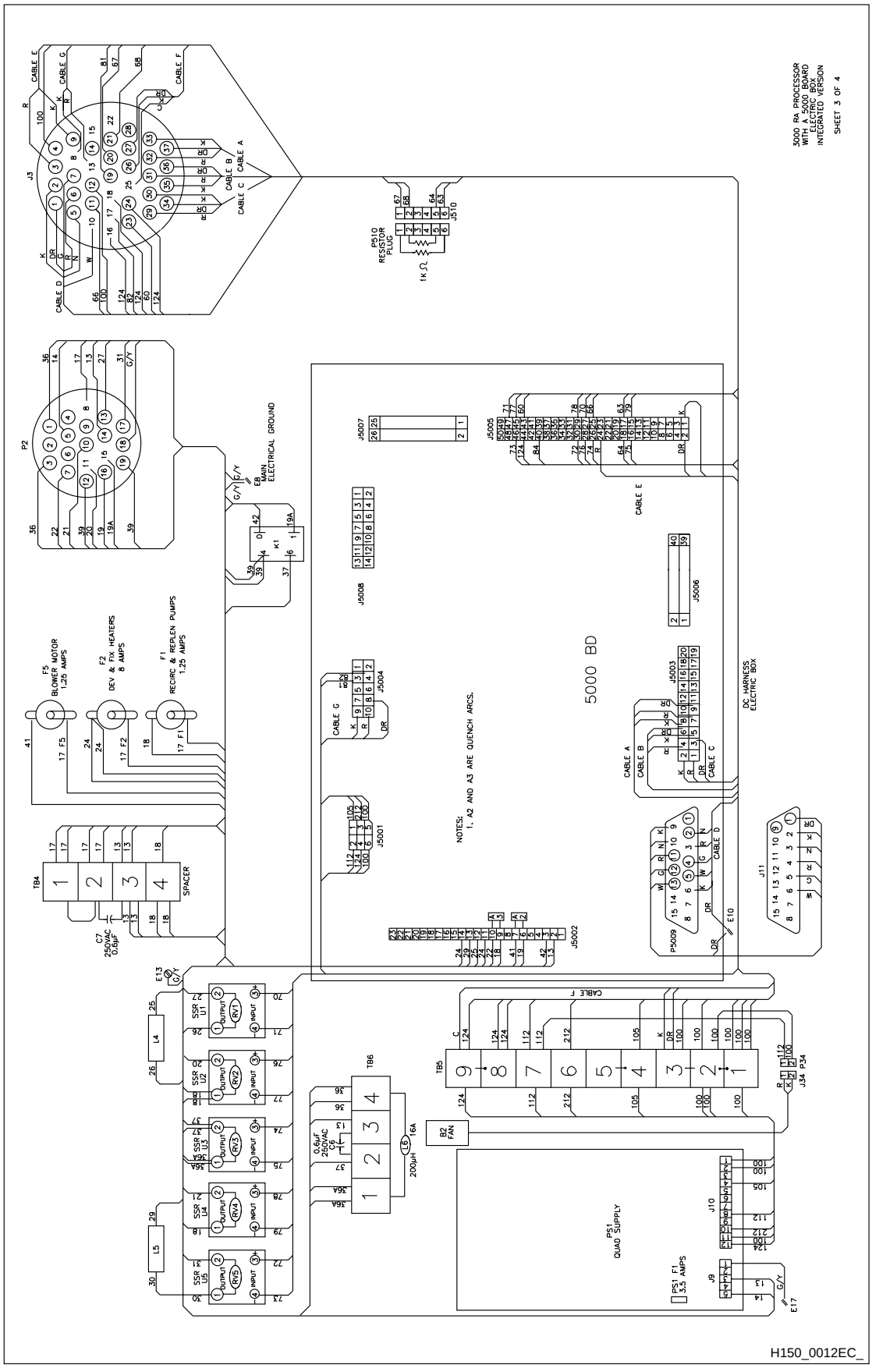
AC Diagram for a 5000 BOARD Installed in the PROCESSOR



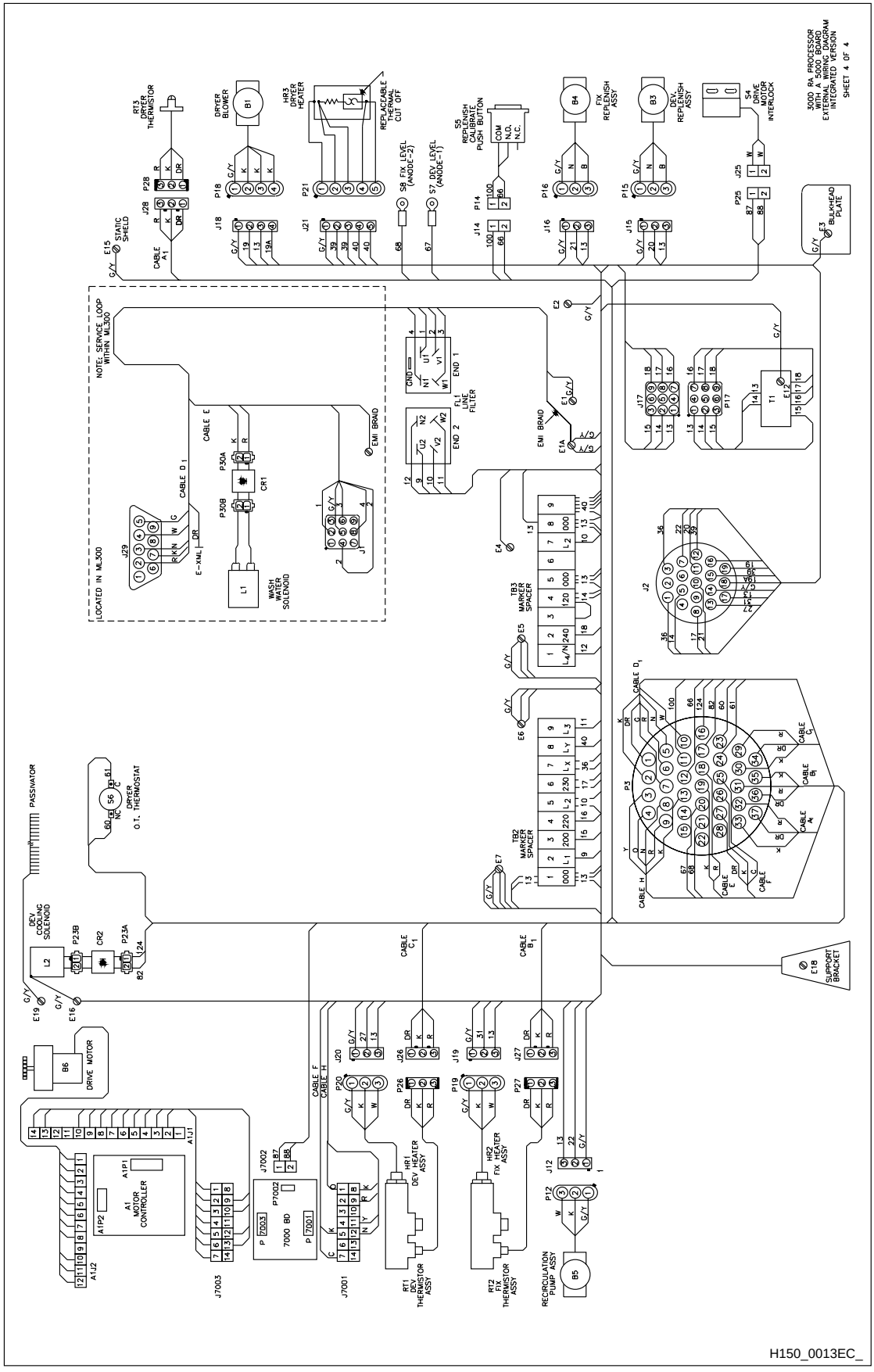
DC Diagram for a 5000 BOARD Installed in the PROCESSOR



ELECTRICAL BOX for a 5000 BOARD Installed in the PROCESSOR



External Wiring Diagram for a 5000 BOARD Installed in the PROCESSOR



Section 4: Illustrated Parts List

Figure 1 5000 BOARD

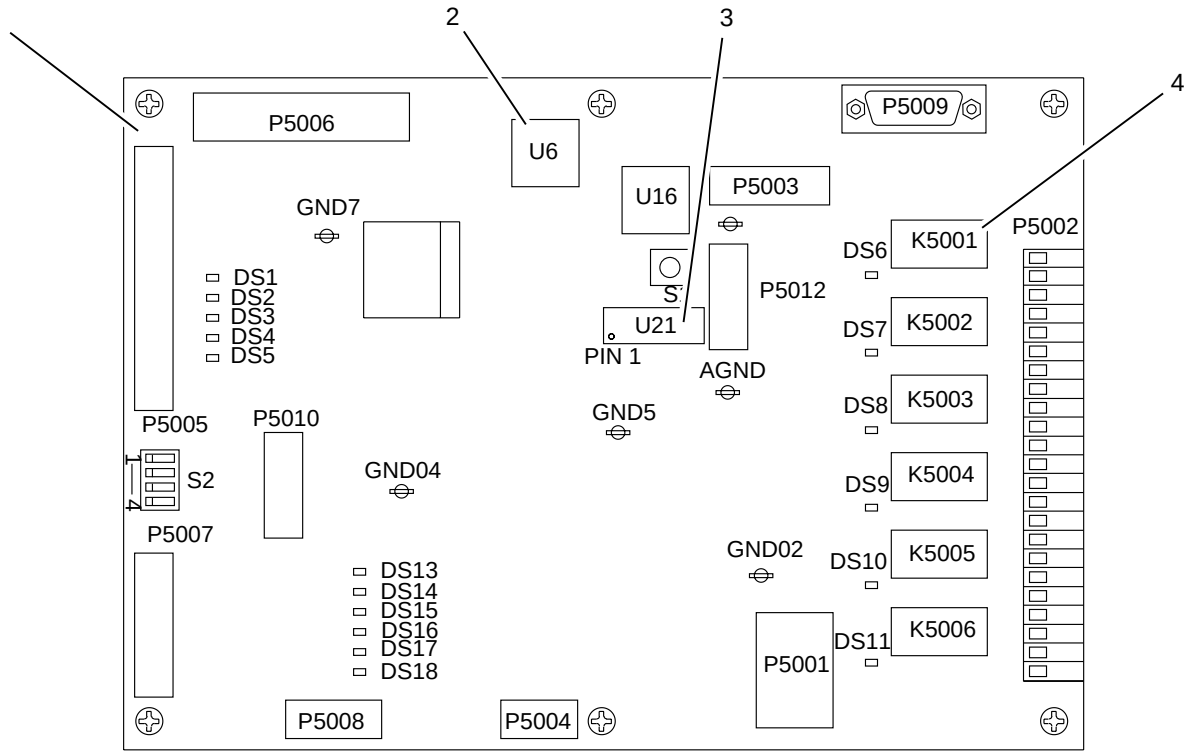


Figure 1 5000 BOARD

Item	Part No.	Description	Qty.	Notes
1	6E5142	5000 BOARD	1	Includes Items 2 - 4
2	8B6711	PROM - Boot	1	U6
3	979762	CLOCK/MEMORY MODULE	1	U21 is not included with 6E5142
4	1E5661	RELAY 8A	6	RELAYS K1 - K5
5	6E5137	OPERATING SOFTWARE for the 5000 BOARD	1	not shown
6	7E6705	DIAGNOSTICS SOFTWARE for the 5000 BOARD	1	not shown

Publication History

Print Date	Pub No.	ECO No.	Affected Pages	File Name	Notes
20APR01	3E0810	---	All	3E0810.fm	First Printing

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EASTMAN KODAK COMPANY
Rochester, NY 14650

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